REMARKS

The enclosed is responsive to Examiner's final Office Action mailed on June 5, 2006. At the time Examiner mailed the final Office Action claims 5-11 and 23-52 were pending. By way of the present response Applicants have: 1) amended no claims; 2) added no new claims; and 3) canceled no claims. As such, claims 5-11 and 23-52 are now pending. Applicants respectfully request reconsideration of the present application and the allowance of all claims now presented.

Claim Rejections – 35 USC §101

Claims 5-9, 23-28, 29-37, 38-43, and 44-52 stand rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 5 includes the features of reading from a source file a plurality of algebraic expressions and converting a set of signomial expressions to a format to be accepted by a computer-aided geometric program solver. The present action contends that the method of claim 5 does not provide sufficient teaching that "the reduced expressions to be submitted to the solver lead to any concrete transformation of data." Pages 2-3 of the present action. The action states that the claim lacks a "reasonable description of... what tangible form the final reduced expressions would have been stored in or represented as (e.g., a file, computer-medium...)" *Id.* Applicants respectfully submit that the format to be

accepted by a computer-aided geometric program solver of the method of claim

5 is a tangible and useful result.

The present action contends that the results of the method of claim 5 may

be construed as being "mere expressions construed from a mental deviation

process." *Id.* Applicants respectfully submit that the method of claim 5 is a

computer-implemented method. A computer implements the feature of

converting expressions to a format to be accepted by a solver, and thus the

method cannot be "mere expressions construed from a mental deviation

process." *Id.* Hence, the method of claim 5 provides sufficient teaching that "the

reduced expressions to be submitted to the solver lead to [a] concrete

transformation of data."

Applicants respectfully submit that claim 5 overcomes all 35 USC 101

rejections.

The above argument also applies to claims 23, 29, 38, and 44. Therefore,

Applicants respectfully submit that claims 23, 29, 38, and 44 also overcome all

35 USC 101 rejections.

Since claims 6-9, 24-28, 30-37, 39-43, and 45-52 depend from

independent claims 5, 23, 29, 38, or 44, Applicants respectfully submit that

claims 6-9, 24-28, 30-37, 39-43, and 45-52 overcome all 35 USC 101 rejections.

Claim Rejections – 35 USC §103

Claims 5-11, 23-52 stand rejected as being unpatentable over Shao-Po et al., "A Parser/Solver for Semidefinite Programs with Matrix Structure" (hereinafter "Shao-Po") in view of Hershenson et al, U.S. Patent No. 6,311,145 (hereinafter "Hershenson") and further in view of Dennis Bricker, "Signomial Geometric Programming" (hereinafter "Bricker").

In reference to claim 5, Applicants respectfully submit that Shao-Po in view of Hershenson and further in view of Bricker does not teach or suggest all of the features of the claim. More specifically, Shao-Po, Hershenson, and Bricker do not describe creating a set of <u>signomial</u> expressions by converting each mathematical term to a signomial.

Shao-Po describes a parser for semidefinite programs. Shao-Po does not describe <u>signomial</u> expressions or <u>creating</u> a set of signomial expressions.

Hershenson describes solving a set of posynomial functions, but Hershenson does not describe <u>creating</u> a set of signomial expressions from a group of mathematical expressions.

Bricks describes how signomial problems are solved. Bricks does not describe, though, <u>creating</u> a set of signomial expressions from a group of mathematical expressions. In Bricks, the signomial problem is explicitly stated then solved.

In reading page 5 of the present action, Applicants are confused as to whether the Examiner is citing Shao-Po as describing that terms are converted into signomial expressions or taking official notice as to the feature of claim 5. The present action states, "Shao-Po does not specify that the mathematical terms or constraints are converted into a set of signomial expressions." The present action then states that the described use of the program Matlab® in Shao-Po would lead one skilled in the art to amend the parser of Shao-Po so as to be able to create signomial expressions.

As previously stated, Shao-Po describes a parser for semidefinite programming. Semidefinite programming is the minimization (or maximization) of a _linear_ function subject to the constraint that an affine combination of symmetric matrices is positive semidefinite. See Lieven Vandenberghe and Stephen Boyd, "Semidefinite Programming," http://www.stanford.edu/~boyd/ reports/semidef_prog.pdf#search=%22semidefinite%20program%22, **Siam Review**, March 1996 (hereinafter "Boyd"). It is not obvious to amend Shao-Po to include creating signomial expressions because Shao-Po does not even deal with implementation of the same realm of mathematics as the present invention (linear functions compared to signomial expressions). In addition, the abstract of Shao-Po expressly limits Shao-Po to teaching processes that prepare _semidefinite programming_ problems (SDPs) or _determinant maximization_ problems (max-det problems). No where is it suggested by Shao-Po that the processes taught by Shao-Po can be extended to _geometric_ programs. The described use of Matlab® in Shao-Po is not sufficient to expand Shao-Po to a

completely different area of knowledge. Therefore, Shao-Po does not describe or suggest creating a set of signomial expressions.

Examiner appears to be taking "Official Notice" of the feature "creating a set of signomial expressions" of the method of claim 5. Under MPEP 2144.03(c), Applicants request the Examiner provide adequate evidence to support the "Official Notice."

Since Shao-Po in view of Hershenson and further in view of Bricks does not teach or suggest all of the features of claim 5, Applicants respectfully submit that claim 5 is in condition for allowance.

In reference to claims 23 and 38, the above arguments also apply to those claims. Therefore, Applicants respectfully submit that claims 23, 29, 38, and 44 are also in condition for allowance.

In reference to claim 29, Applicants respectfully submit that Shao-Po in view of Hershenson and further in view of Bricker does not teach or suggest all of the features of the claim. More specifically, Shao-Po, Hershenson, and Bricker do not describe combining terms to reduce an algebraic expression to a posynomial objective, a posynomial inequality, or a monomial equality.

As previously stated, Shao-Po describes a parser for semidefinite programs. Shao-Po does not describe posynomials or monomials or creating posynomials or monomials by combining terms.

Hershenson describes solving a set of posynomial functions, but Hershenson does not describe creating a posynomial or monomial.

Bricks describes how signomial problems are solved. Bricks does not describe, though, creating a posynomial or monomial. In Bricks, the signomial problem is explicitly stated then solved.

The present action states, "Shao-Po does not disclose that the reduced form...[is] a posynomial objective, a posynomial inequality, [or] a monomial equality." See page 11. The present action states, though, that in view of Hershenson, the feature would have been obvious as set forth in claim 5. Hershenson only describes solving posynomials, not creating posynomials or monomials. Therefore, Hershenson is not relevant in describing creating a posynomial or monomial.

Referring to the previous argument made in reference to claim 5, Applicants are confused as to whether the Examiner is citing Shao-Po as describing the feature or taking official notice as to the feature of claim 29. The present action states that the described use of the program Matlab® in Shao-Po would lead one skilled in the art to amend the parser of Shao-Po so as to be able to create a posynomial or monomial.

As previously stated, Shao-Po describes a parser for semidefinite programming. Semidefinite programming is the minimization (or maximization) of a linear function subject to the constraint that an affine combination of symmetric matrices is positive semidefinite. See Boyd. It is not obvious to

amend Shao-Po to include creating a psynomial or monomial because Shao-Po

does not even deal with implementation of the same realm of mathematics as

the present invention (linear functions compared to monomials). In addition, the

abstract of Shao-Po expressly limits Shao-Po to teaching processes that prepare

semidefinite programming problems (SDPs) or determinant maximization

problems (max-det problems). No where is it suggested by Shao-Po that the

processes taught by Shao-Po can be extended to geometric programs. The

described use of Matlab® in Shao-Po is not sufficient to expand Shao-Po to a

completely different area of knowledge. Therefore, Shao-Po does not describe

or suggest creating a posynomial or monomial, let alone a posynomial objective,

a posynomial inequality, or a monomial equality.

Examiner appears to be taking "Official Notice" of the feature of claim 29.

Under MPEP 2144.03(c), Applicants request the Examiner provide adequate

evidence to support the "Official Notice."

Since Shao-Po in view of Hershenson and further in view of Bricks does

not teach or suggest all of the features of claim 29, Applicants respectfully

submit that claim 29 is in condition for allowance.

In reference to claim 44, the above arguments also apply to the claim.

Therefore, Applicants respectfully submit that claim 44 is also in condition for

allowance.

Since claims 6-11, 24-28, 30-37, 39-43, and 45-52 depend from

independent claims 5, 23, 29, 38, or 44, Applicants respectfully submit that

claims 6-11, 24-28, 30-37, 39-43, and 45-52 are in condition for allowance.

App. No.: 09/752,541   -19-   Atty. Docket No.: 4363.P001
Amdt. dated Sept 5, 2006
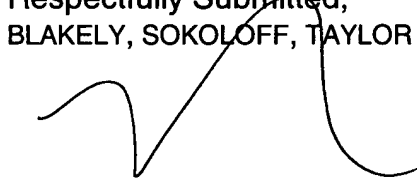Reply to Final Office action of June 5, 2006

CONCLUSION

Applicants respectfully submit that all rejections have been overcome and that all pending claims are in condition for allowance.

If there are any additional charges, please charge them to our Deposit Account Number 02-2666. If a telephone conference would facilitate the prosecution of this application, Examiner is invited to contact Robert B. O'Rourke at (408) 720-8300.

Respectfully Submitted,
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